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## **A Critical Review of Cosmetic Treatment Outcomes in Body Dysmorphic Disorder**

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### **Abstract**

A high proportion of individuals with body dysmorphic disorder (BDD) undergo cosmetic treatments in an attempt to 'fix' perceived defect/s in their physical appearance. Despite the frequency with which such procedures are sought, few studies have prospectively examined the outcomes of cosmetic procedures in individuals with BDD. This article aims to critically review the literature and discuss the current debate that exists on outcomes of cosmetic treatment for individuals with BDD. An emerging literature suggests the majority of individuals with BDD have poor outcomes after cosmetic interventions; however, based on the current literature, it cannot be fully ruled out that certain individuals with mild BDD and localised appearance concerns may benefit from these interventions. Gaps in the current literature are highlighted, alongside recommendations for future research. Carefully conducted longitudinal studies with well-characterized patient populations are needed.

**Keywords:** Body Dysmorphic Disorder, Dysmorphophobia, Cosmetic surgery, Aesthetic surgery, Dermatologic treatments

## Introduction

Body dysmorphic disorder (BDD) is a disabling mental health disorder characterised by a distressing and/or impairing preoccupation with a *perceived* defect in physical appearance. This is typically accompanied by time-consuming repetitive behaviours such as mirror checking or camouflaging the perceived defect(s) (American Psychiatric Association, 2013). Epidemiological studies indicate that BDD affects between 0.7% to 2.4% of individuals in the general population (Buhlmann et al., 2010; Faravelli et al., 1997; Koran, Abujaode, Large, & Serpe, 2008; Otto, Wilhelm, Cohen, & Harlow, 2001; Rief, Buhlmann, Borkenhagen, & Brahler, 2006). BDD is associated with substantial psychiatric comorbidity (Pavan et al., 2008), poor quality of life (Didie et al., 2007) and high rates of suicidality (Phillips, Menard, Fay, & Weisberg, 2005).

A high proportion of patients with BDD, around 76%, undergo cosmetic treatments, both surgical and minimally invasive treatments, in an attempt to 'fix' perceived defect/s in physical appearance (Crerand, Menard, & Phillips, 2010; Crerand, Phillips, Menard, & Fay, 2005; Metcalfe et al., 2014; Phillips, Grant, Siniscalchi, & Albertini, 2001). Surgical treatments include operations such as rhinoplasty, breast augmentation, labiaplasty, implants and rhytidectomy. Minimally invasive treatments include dermatological procedures (e.g., chemical peels), dentistry work, electrolysis, collagen injections and mole removal. The prevalence rate of BDD across surgical and minimally invasive treatment settings is believed to be between 5% and 20% (Alavi, Kalafi, Dehbozorgi, & Javadpour, 2011; Crerand, Franklin, & Sarwer, 2006; Metcalfe et al., 2014; Pavan et al., 2006; Phillips, Dufresne, Wilkel, & Vittorio, 2000; Sarwer, Whitaker, Pertschuk, & Wadden, 1998; Veale, De Haro, & Lambrou, 2003; Vulink et al., 2006). For instance, up to 25% of individuals seeking rhinoplasty have been found to meet DSM-IV criteria for BDD (Alavi et al., 2011; Ghadakzadeh, Ghazipour, Khajeddin, Karimian, & Borhani, 2011; Veale et al., 2003; Vulink et al., 2008). Similarly high rates have been found in cosmetic, dermatological, and

orthodontic clinics, where 5%, 12%, and 10% of individuals endorse BDD symptomatology respectively (Phillips et al., 2000).

BDD is a disorder of childhood with over 70% of cases reporting an onset prior to 18 years of age (Bjornsson et al., 2013; Phillips & Diaz, 1997). Initial research suggests up to 47% of young patients with BDD desire cosmetic treatment with around 33% receiving such interventions (Crerand et al., 2005; Mataix-Cols et al., 2015; Phillips et al., 2001). The psychological, legal and ethical considerations of performing cosmetic treatments on young people have previously been detailed (e.g., Crerand & Magee, 2013). The literature on cosmetic treatment for adults with BDD is limited, but the paucity of research is even more pronounced in relation to young people under 18.

### **Outcomes of Cosmetic Treatments**

Despite the frequency with which individuals with BDD seek cosmetic treatments, few studies have examined the outcomes associated with such treatments in BDD. The overall message to practitioners to date has been that cosmetic interventions for individuals with BDD are detrimental (e.g., Crerand et al., 2006; Wilhelm, Phillips, & Steketee, 2013). Recently, however, increasing numbers of studies have provided preliminary evidence for positive outcomes in terms of satisfaction with procedure and reduction of BDD symptoms (Felix et al., 2014; Veale et al., 2014a). These findings have re-energised the debate as to whether the presence of BDD should be a contra-indication for cosmetic treatments (de Brito et al., 2015; de Brito, Nahas, & Ferreira, 2012; Felix et al., 2014; Morselli & Boriani, 2012). One side of the debate argues that cosmetic treatments are unlikely to address the underlying core symptomatology of BDD (e.g., Crerand et al., 2005, 2010; Phillips et al., 2001), the other side claims that a selected group of individuals with BDD (e.g., individuals with mild to moderate BDD and with a single concern with realistic psychosocial expectations) might respond well to certain cosmetic treatments (e.g., Felix et al., 2014; Veale et al., 2003). Currently, mental health professionals are making recommendations

against cosmetic treatments for BDD but the evidence supporting these recommendations needs to be clear.

### **Aim of Current Review**

The aim of the present article is to provide an up-to-date critical review of the literature on the outcomes of cosmetic treatments for individuals with BDD. Specifically, we aim to present and critique the breadth of outcomes that form the current debate and consider the clinical implications. Gaps in the current literature identified and future directions for research discussed.

### **Method**

A literature search was conducted using EMBASE, Psychinfo, and MEDLINE. The inclusion criterion for this review were English-language articles on quantitative outcomes of cosmetic treatment for individuals diagnosed with or reasonably suspected to have BDD, with no other restriction. These were identified using the search terms “body dysmorphic disorder,” OR “dysmorphophobia,” OR “imagined ugliness,” OR “polysurgical addicts,” OR “insatiable patient,” AND “plastic surgery,” OR “cosmetic surgery,” OR “aesthetic treatment,” OR “aesthetic surgery,” OR “cosmetic treatment”. Reviews and studies assessing the prevalence of BDD, screening instruments, and/or other aspects not related to outcomes were excluded. As summarised in Table 1, a total of 11 peer-reviewed articles on pre- or post-cosmetic treatment outcomes for individuals with BDD or reasonably suspected BDD were identified. Two of these articles included a minority of young people.

### **Results**

#### **Negative Outcomes following Cosmetic Treatment in BDD**

To date, the vast majority of studies suggest that cosmetic treatments for individuals with BDD are associated with poor outcomes (Crerand et al., 2005, 2010; Phillips & Diaz,

1997; Phillips et al., 2001; Picavet et al., 2013; Veale, 2000). Phillips and Diaz (1997) and Veale (2000) were among the first authors to systematically examine psychological outcomes for individuals with BDD who had received cosmetic treatments.

Using a semi-structured interview of treatment history and the Clinical Global Impression Scale (CGI; Guy, 1976) to assess outcome of cosmetic interventions, Phillips and Diaz (1997) asked 188 adults with BDD seeking psychological treatment about past cosmetic treatments (both surgical and minimally invasive interventions). The majority of patients (78% of women and 61% of men) reported their BDD symptoms to be unchanged or worsened following such procedures.

Veale (2000) asked 25 patients with BDD who had received cosmetic treatment to rate their satisfaction and any changes in preoccupation, distress and functional impairment since the procedure. Self-report ratings using Likert scales, were consistently poor for the majority of respondents. For example, 31 out of total of 46 procedures (surgical and minimally invasive) resulted in satisfaction ratings of between 0-2.9 on an 11-point scale. The average rating for changes in preoccupation and handicap were 4.4 and 4.1 respectively on a 7-point scale. However, outcomes varied according to the cosmetic procedure, with worse outcomes found for rhinoplasty and those receiving repeated operations. This finding raises the interesting question of whether certain cosmetic procedures are associated with better or worse outcomes for BDD. In line with this hypothesis, Crerand et al. (2010) found a trend for a more positive response to surgical interventions compared to minimally invasive interventions (e.g., chemical peels) in terms of preoccupation with the treated body part, but not for overall BDD symptomatology.

Among the most widely-cited studies in this area are three large retrospective studies of between 200-289 patients with BDD, all of whom were seeking or receiving psychiatric care (Crerand et al., 2005, 2010; Phillips et al., 2001). These studies are the largest to date and two are the only studies currently that include outcomes for young people with BDD

(Crerand et al., 2005; Phillips et al., 2001). BDD diagnosis and severity were assessed using the Structured Clinical Interview for DSM-BDD Module (SCID-BDD; Phillips et al., 1995) the Yale-Brown Obsessive Compulsive Scale modified for BDD (YBOCS-BDD; Phillips et al., 1997). Data on cosmetic treatments were obtained retrospectively using a semi-structured interview of treatment history, whilst treatment outcomes were assessed using the CGI. Specifically, patients were asked to rate the impact that the cosmetic intervention had on overall BDD symptoms and on the treated body part, on a scale from one (very much improved) to seven (very much worse). Consistently across these studies, CGI scores indicated that both surgical and minimally invasive cosmetic treatments, rarely resulted in improvements for adults or young people alike. For adults, in 72-91% of cases, the procedures led to no perceived change of BDD symptoms, and in 5.4-16.3% of cases, BDD symptoms deteriorated (Crerand et al., 2005; Phillips et al., 2001). In the later study by Crerand et al. (2010), 97.7% of adults receiving either surgical or minimally invasive procedures reported that there was no perceived change or a deterioration in BDD symptoms. Most individuals reported developing new appearance concerns, continuing to worry about the treated area (82.3%) and/or worrying that an improved body part would become ugly again (73.3%) (Crerand et al., 2005; Phillips et al., 2001). For young people, none of the cosmetic treatments received resulted in a reduction of the concern of the body part or the overall BDD symptom severity (Phillips et al., 2001). Treatments included minimally invasive procedures such as dermatology interventions and dentistry work as well as one instance of cosmetic surgery (procedure not specified).

To date, there are just three prospective studies on cosmetic treatment outcomes for individuals with BDD that add weight to the findings that individuals with BDD do not tend to benefit from such procedures. In 2007, Tignol and colleagues compared outcomes of surgical procedures for a group of individuals with BDD ( $N = 10$ ) and a group without ('non-BDD';  $N = 14$ ) in the first prospective study of this kind. The SCID-BDD (Phillips et al., 1995),



Mini International Neuropsychiatric Inventory (Sheehan, Harnett-Sheehan, & Raj, 1996), and the Sheehan Disability Scale (SDS) (Sheehan et al., 1996) were utilised to examine the impact of surgery on diagnosis, comorbidities, and BDD-related disability. There were no significant differences in satisfaction ratings between the two groups 5 years post-operatively, with overall high satisfaction being reported (a rating of 4/5 for the BDD group and 4.4/5 for the non-BDD group, where 5 equalled 'highly improved'). However, six out of the seven individuals with BDD who underwent surgery continued to meet DSM-IV criteria for the disorder following this. Relative to the group without BDD, individuals with BDD also endorsed significantly higher scores on the SDS following surgery, indicative of considerable BDD-related disability in spite of the intervention.

In a second prospective study, Picavet et al. (2013) examined post-surgical outcomes for 166 individuals attending an Ear, Nose and Throat Clinic using the YBOCS-BDD (Phillips et al., 1997), the SDS (Sheehan et al., 1996), and a one-item satisfaction questionnaire among other measures. Irrespective of any diagnosis, the authors note that scores on the YBOCS-BDD before surgery were inversely correlated with satisfaction and quality of life post-surgery, and positively correlated with appearance-related distress and impairment. By extrapolating the results to the BDD population, the authors suggest that the greater the severity of BDD symptoms initially, the poorer the outcomes of surgical procedures may be.

Finally, among a sample of 728 individuals attending an oculofacial surgery clinic, Woolley and Perry (2015) found that those who scored above the cut-off for BDD on the Dysmorphic Concern Questionnaire (Oosthuizen, Lambert, & Castle, 1998) were more likely to endorse negative complications following their surgery. Indeed, these individuals experienced higher post-operative pain levels, greater complications, and higher re-operation rates compared to those scoring below the cut-off.

Taken together, these studies suggest that cosmetic treatments for those with BDD are generally associated with low levels of patient-reported satisfaction and overall poor outcomes (Crerand et al., 2005, 2010; Phillips & Diaz, 1997; Phillips et al., 2001; Picavet et al., 2013; Veale, 2000). The only prospective study using a standardised diagnostic instrument suggested that such procedures do not impact on BDD diagnosis (Tignol, Biraben-Gotzamanis, Martin-Geuhl, Grabot, & Aouizerate, 2007). However, results should be interpreted in light of a number of methodological shortcomings, most notably the largely retrospective nature of these studies as well as the sub-optimal diagnostic and assessment methods.

The majority of these studies recruited individuals from psychiatric settings. Patients attending such clinics following cosmetic treatments may be more likely to have experienced 'surgery failures' and may have more severe presentations of BDD. Thus, there may be a recruitment bias in favour of cosmetic treatment failures in these studies (Crerand et al., 2005; Phillips et al., 2001). Furthermore, surgical outcomes have been frequently assessed using single-item, self-reported scales of improvement in symptoms/appearance or satisfaction with the surgery (e.g., Crerand et al., 2005, 2010; Phillips & Diaz, 1997; Phillips et al., 2001; Veale, 2000). This method of assessment is dependent on the individual's perception of improvement, as opposed to being based on an objective measurement. It is also subject to the individual's recall and insight into their condition. Finally, without control comparison groups we cannot know how cosmetic treatment outcomes for BDD may differ from those for patients with other psychiatric disorders where such treatment is generally not discouraged. This is important to address given claims that pre-existing psychopathology or psychological problems predict outcomes in this area (Crerand, Infield, & Sarwer, 2007; von Soest, Kvaalem, Skolleborg, & Roald, 2011; von Soest, Kvaalem, & Wichstrøm, 2012).

### **Positive Outcomes following Cosmetic Treatment in BDD**

180 Recently, a small number of studies have provided data suggesting that surgery  
181 may be helpful for a selected group of individuals with BDD (e.g., individuals with mild to  
182 moderate BDD or those receiving specific types of surgical interventions) (Felix et al., 2014;  
183 Veale et al., 2003, 2014a).

184 In the first study, Veale et al. (2003) identified 6 out of 29 individuals undergoing  
185 rhinoplasty as having “possible BDD” pre-surgery using the Body Dysmorphic Disorder  
186 Questionnaire (BDDQ; Phillips, Atala, & Pope, 1995). The BDDQ is a screening  
187 questionnaire involving four questions. Individuals were considered to have “possible BDD” if  
188 they answered ‘yes’ to both parts of question one, at least one option in question three and  
189 either of the last two options of question four. They all answered ‘no’ to question two  
190 regarding whether their main concern with appearance was that they might become too fat.  
191 Of these six individuals, one individual with BDD was lost to follow-up. Of the remaining five,  
192 three were classified as having “possible BDD” at 3 months post-surgery and none with  
193 “possible BDD” at 9 months post-surgery. Furthermore, the BDD and non-BDD groups were  
194 found to be equally satisfied with the outcome of rhinoplasty, as assessed using a one-item  
195 questionnaire on satisfaction.

196 A similar pattern of findings was reported in a recent, larger study (Felix et al., 2014)  
197 in which 116 women seeking rhinoplasty were screened for BDD pre- and post- operatively,  
198 using the Body Dysmorphic Disorder Examination (BDDE; Rosen & Reiter, 1996). In total,  
199 31 women were classified as having mild-to-moderate BDD pre-surgery. Post-surgery and at  
200 1 year follow-up, this patient group reported satisfaction with the procedure (the authors  
201 however do not state how satisfaction was assessed in their study). The authors concluded  
202 that “individuals with mild to moderate BDD may benefit from rhinoplasty”. There are  
203 however, some serious methodological limitations with this study which are discussed  
204 below.

The third and final study suggesting positive outcomes for cosmetic surgery in BDD examined psychosexual outcomes following labiaplasty (Veale et al., 2014a). Individuals who scored above cut-off on the Cosmetic Procedure Screening for Labiaplasty (COPS-L; Veale et al., 2013) were then assessed for BDD using the SCID-BDD (Phillips et al., 1995). Nine out of 49 women seeking labiaplasty met diagnostic criteria for BDD pre-surgery. Eight were followed-up 3 months post-surgery, seven of whom achieved remission from BDD according to the SCID-BDD module. These individuals also reported satisfaction with the procedure in response to a 'yes/no' question. The authors suggest BDD may not be contraindicated for labiaplasty, at least in the short term.

The interpretation of these positive findings must be considered within the context of a number of important methodological limitations. A major uncertainty emerging from the investigations cited above is whether the diagnosis of BDD could be confidently established. In particular, considerable methodological limitations related to diagnostic procedures limit the validity of findings by Felix et al. (2014). In their study, approximately half of the 'BDD group' (17/31) were considered to have a moderate to marked nasal deformity, an exclusion criteria for BDD. Also, whilst high remission rates were reported, it was unclear how remission was defined as all subjects spent at least one hour per day worrying about their defect at follow-up. This would be in line with a BDD diagnosis. Furthermore, the sample consisted of female participants only and it excluded individuals with severe BDD symptoms and those with overt avoidance behaviours, yet again challenging the diagnostic status and the representativeness of their BDD sample. This paper and its findings have been disputed within the field (e.g., Crerand & Phillips, 2014).

The above studies have also not indicated whether individuals were receiving other (possibly psychiatric) treatment concomitant with surgery, and therefore it is not possible to determine to what extent improvements in BDD were a direct consequence of cosmetic interventions (Veale et al., 2003, 2014a). Finally, satisfaction ratings were typically obtained

using single-item questionnaires (e.g., Felix et al., 2014). Crerand et al. (2010) proposed that positive satisfaction ratings post cosmetic treatments are often time-limited, perhaps due to BDD being a chronic rather than episodic disorder. Surgery may help with one appearance concern but the person may develop new concerns with other features. This potentially provides an explanation for positive satisfaction ratings reported directly after an intervention.

In light of these limitations, the evidence that some patients with BDD may achieve a reduction or remission of their symptoms following surgical treatment is preliminary and far from conclusive.

#### **Adverse Events following Cosmetic Treatment in BDD**

There are a number of reports of relatively extreme adverse events following cosmetic treatments in individuals with BDD or suspected BDD. A handful of clinical reports, case series, and single case studies (including media reports) highlight violence and aggression perpetuated by patients with suspected BDD towards professionals, with at least four documented cases of surgeons murdered by individuals whose symptoms were consistent with a BDD diagnosis (Cotterill, 1996; Goin & Goin, 1986; Gorney, 2006; Ladee, 1966; Leonardo, 2001; Lucas, 2002; McConnell, Lee, Black, & Shriver, 2015; Phillips, McElroy, & Lion, 1992; Phillips et al., 2001; Sarwer, 2002; Wright, 1987; Yazel, 1999). More recently, a case has been documented of a surgeon with suspected BDD who performed surgery on himself (Rafin, Pimstone, & Rapaport, 2011) and McConnell et al. (2015) describe how someone with suspected BDD committed suicide some years after being refused further surgical treatment.

It has been reported that occasionally patients with BDD will undergo several surgeries, with potentially irreversible outcomes (Veale, 2000). Others, in a desperate attempt to fix their perceived deformity or to ensure that they receive surgery, subject themselves to 'self-surgery', the consequences of which can be life-threatening (Phillips,

2005; Veale, 2000). Veale (2000) found that 9 out of 25 (36%) individuals with BDD attending a BDD clinic had performed “DIY surgery”, for example, stapling facial skin in an attempt to make it more taut.

There have been documented cases of patients with BDD who have become suicidal following surgery (e.g., Phillips et al., 2001). However, the same large retrospective study found no overall difference in suicidal ideation or attempts between receivers and non-receivers of cosmetic treatment. From a clinical perspective, having a cosmetic procedure may give hope to an individual with BDD and when this is not fulfilled, they may become more vulnerable and at risk of suicide. Of note, although these reports are widely cited in the field, most are post-hoc reports without assessment of BDD and as such, it cannot be determined whether these adverse outcomes were as a result of BDD, the cosmetic procedure, or other factors that were not assessed.

Taken together, reports on extreme adverse outcomes highlight potentially life-threatening complications for individuals with BDD undergoing cosmetic treatments and for professionals operating on them. Of note, however, the above outcomes are largely derived from case descriptions or studies where the diagnosis of individuals was not systematically assessed, limiting the conclusions that can be drawn. It is also possible that some of these outcomes (e.g., suicidality following surgery) reflect the nature and course of the disorder rather than being a direct consequence of cosmetic treatment. Nevertheless, the above reports highlight the need to be aware of self-surgery and the potentially negative outcomes (e.g., aggression, legal disputes, suicidality) that may occur when delivering cosmetic treatments to both adults and young people with BDD.

## Discussion

In light of the recent debate, this review aimed to summarise the literature on outcomes for cosmetic treatment for individuals with BDD. A total of 11 studies (six

retrospective and five prospective studies) were reviewed, with variations in findings. On the whole, in spite of the paucity of research and the methodological limitations, the weight of the evidence thus far leans toward the conclusion that cosmetic treatment may be an ineffective intervention for the majority of individuals with BDD. This evidence is, however, largely based on retrospective studies looking at adult individuals' recall of perceived outcomes, with the majority of individuals being recruited from psychiatric settings (Crerand et al., 2005, 2010; Phillips et al., 2001; Veale, 2000).

Given the potential bias for surgery failures and more severe presentations of BDD in psychiatric settings, large prospective outcome studies are warranted, in which individuals with BDD from the general population (i.e., not in psychiatric care), including young people, are identified pre-cosmetic treatment and followed-up. Investigation of this kind would benefit from the use of standard diagnostic tools / instruments for the proper identification of BDD in individuals which would enable conclusions to be directly applicable to those with BDD. Future prospective studies should also aim to incorporate follow-up data to enable us to establish the stability of any changes to BDD severity/diagnosis following cosmetic treatments. Finally, previous investigations have largely assessed outcomes using single-item self-report questionnaires on improvement or satisfaction, limiting our understanding of the impact of cosmetic treatment for BDD in all its facets. A broader range of outcome measures (e.g., measures of mood, suicidality quality of life) should be included in future studies.

A few studies have implicated BDD severity, specific surgical interventions and location / area of concern as important factors influencing outcomes (Felix et al., 2014; Veale, 2000; Veale et al., 2003, 2014a). Future research should seek to replicate these findings and establish other demographic and clinical characteristics that may moderate outcome following cosmetic interventions in BDD. Candidate moderators include expectations of the patient, number of areas of concern, extent of preoccupation, and

psychiatric co-morbidity (Gorney, 2010). Given the difficulties with accurate diagnosis of BDD, relying solely on the BDD diagnosis may be too crude a predictor of poor outcome. The threshold for determining a 'perceived or slight defect', which is part of the current definition of BDD, has been raised as a potential pitfall in cosmetic settings. Specifically Picavet et al. (2013) suggest that judgement of a 'slight defect' by practitioners in such settings may end up excluding individuals from a BDD diagnosis with otherwise clear BDD symptomology.

### **Considerations of Future Research**

Whilst there is a clear need for further, methodologically rigorous research on cosmetic procedures in BDD, research in this field raises a number of ethical dilemmas. In particular, one can question whether it is ethical to undertake a cosmetic procedure on an individual with BDD given the potential for a negative outcome. Despite their limitations, there are some studies we have cited here that point to the possibility of carrying out prospective work in this area (e.g., Tignol et al., 2007). The available literature also points to the fact that surgery is not the most frequently sought intervention although all of the prospective studies here were undertaken in a surgical setting. There may be more scope to conduct research within other cosmetic settings where minimally invasive treatments are completed. In either setting, research in this field would require careful risk management procedures.

Finally, within Europe, there is an emphasis on patient involvement in research (e.g., Trivedi & Wykes, 2002). Patients with BDD not only desire cosmetic procedures, they also want credible evidence that such procedures could be ineffective. Utilising the viewpoint of those who have suffered with BDD to discuss the dilemmas raised here could be helpful. We hope these strategies may enable a continued focus on this research agenda in order to better inform and influence clinical practice.



## Clinical Implications

Although research regarding outcomes of cosmetic treatments for individuals with BDD is in its infancy, the findings reviewed here do have a number of important clinical implications.

First, accurate detection and assessment of BDD in the medical / cosmetic arenas is clearly needed. A large survey of members of the American Society for Aesthetic Surgery and the American Society for Dermatologic Surgery illustrated that, the large majority of practitioners refuse to treat someone if they suspect BDD is present. However, the majority of surgeons (over 80%) reported not realising that they were treating a patient with BDD until after the surgery (Sarwer, 2002; Sarwer, Spitzer, Sobanko, & Beer, 2015). Recommendations for how practitioners in surgical and cosmetic settings might diagnose and manage patients with BDD are available (Crerand et al., 2006; Sarwer & Crerand, 2008). A range of screening questionnaires are available for practitioners in both mental health and cosmetic settings to help aid successful diagnosis (Dey et al., 2015; Dufresne, Phillips, Vittorio, & Wilkel, 2001; Phillips et al., 1995; Veale et al., 2012).

Accurate diagnosis is only one part of the problem however. Recent surveys suggest practitioners may not consider BDD a contraindication to cosmetic treatment (Sarwer, 2002; Sarwer et al., 2015). This highlights the need for mental health professionals to work closely with practitioners in cosmetic settings in order to raise awareness of BDD, facilitate accurate diagnosis, and increase awareness of the existing evidence regarding outcomes.

Once BDD is identified, appropriate risk assessment by a mental health professional is essential and patients can be directed towards evidenced-based treatments, namely cognitive behaviour therapy (CBT) and selective serotonin reuptake inhibitors (SSRIs) (Krebs, Turner, Heyman, & Mataix-Cols, 2012; Mataix-Cols et al., 2015; Phillips & Hollander, 2008; Veale et al., 2014b; Wilhelm et al., 2013). In line with national and international guidelines (e.g., National Institute for Health and Care Excellence; NICE, 2005), manuals

now exist with guidance on how to engage individuals with BDD in evidence-based treatment, taking into account their desire for cosmetic procedures (Wilhelm et al., 2013).

In summary, there is a need to have increased detection and monitoring of BDD and plans for cosmetic treatment in both psychiatric and cosmetic fields with close liaison between professionals in order to complete appropriate screening and risk assessments. The need for professionals from cosmetic and psychiatric backgrounds to work together has been recommended before (e.g., Crerand et al., 2006; Sarwer & Spitzer, 2012). However as mentioned, recent surveys of practitioners in cosmetic settings suggest 40% still do not consider BDD a contraindication for cosmetic treatments (Sarwer et al., 2015). This suggests there is still much work to be done to translate the current research findings into changes within clinical practice.

## **Conclusion**

The majority of adults and over 40% of young people with BDD seek and then receive cosmetic treatments. Although far from conclusive, the available evidence is suggestive of generally poor outcomes of cosmetic interventions in individuals with BDD. Further research is warranted to build robust evidence and shed further light on the debate as to whether BDD is a contraindication for cosmetic treatment. This information will better guide the recommendations practitioners give to individuals on the ground, especially in child and adolescent services where recommendations are currently being made on the basis of just two retrospective studies. In particular, prospective studies of well characterised individuals with BDD undergoing cosmetic procedures with long-term follow-up, using appropriate diagnostic and multidimensional outcome measures are required to determine the efficacy of cosmetic treatments for BDD and the patient-characteristics that influence outcomes. This information will enable the development of clinical guidelines and assist practitioners in giving BDD patients appropriate advice on cosmetic procedures. Finally, collaboration and education across mental health and cosmetic teams is paramount to

improve screening, identification, and treatment procedures for these highly distressed and vulnerable individuals.

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Table 1

*Summary of Included Studies*

Type of Study	SCID	N	Main Outcome Measure	Setting	Assessment Timing
Retrospective					
Phillips & Diaz, 1997	+	188 BDD	1-item improvement scale (CGI <sup>a</sup> )	Psychiatric	Post
Veale, 2000	+	25 BDD	1-item satisfaction scale (0-10), & change in preoccupation & handicap (0-7)	Psychiatric	Post
Phillips et al., 2001	+	289 BDD (39 YP <sup>b</sup> )	1-item improvement scale (CGI)	Psychiatric	Post
Crerand et al., 2005	+	200 BDD	1-item improvement scale (CGI)	Psychiatric	Post
Crerand et al., 2010	+	200 BDD (16 YP)	1-item improvement scale (CGI)	Psychiatric	Post
Woolley & Perry, 2015	-	728 (N = 50 'BDD')	Pain scores, No. re-operation & complications	Oculofacial practice	Post
Prospective					
Veale et al., 2003	-	29, (N = 6 'BDD')	1-item satisfaction scale (0-8), BDDQ <sup>c</sup>	Private cosmetic clinics	Pre-, 3, & 9 months post
Tignol et al., 2007	+	15, (N = 7 'BDD')	1-item satisfaction scale (0-5), SCID-BDD <sup>d</sup> , Sheehan Disability Scale (SDS), MINI <sup>e</sup> , YBOCS-BDD-SR <sup>f</sup>	Cosmetic surgery clinic	Pre- & 5 years post
Picavet et al., 2013	-	116, (N = 59 'BDD')		Ear, nose & throat dept.	Pre-, 3, & 12 months post
Felix et al., 2014	-	31 'mild-mod BDD'	1-item satisfaction scale, BDDE <sup>g</sup> , Time spent worrying	University of São Paula	Pre- & 1 year post
Veale et al., 2014a	+	49 (N = 9 BDD)	Genital Appearance Satisfaction (0-33), SCID-BDD	Private & NHS Clinics	Pre-, 3, & 11-42 months post

*Note.* <sup>a</sup> Clinical Global Impression Scale (Guy, 1976). <sup>b</sup> Young people. <sup>c</sup> Body Dysmorphic Disorder Questionnaire (Phillips, Atala, & Pope, 1995). <sup>d</sup> Structured Clinical Interview for DSM-IV BDD Module (Phillips et al., 1995). <sup>e</sup> Mini International Neuropsychiatric Inventory (Sheehan et al., 1996). <sup>f</sup> Yale-Brown Obsessive Compulsive Scale modified for BDD (Phillips et al., 1997). <sup>g</sup> Body Dysmorphic Disorder Examination (Rosen & Reiter, 1996).